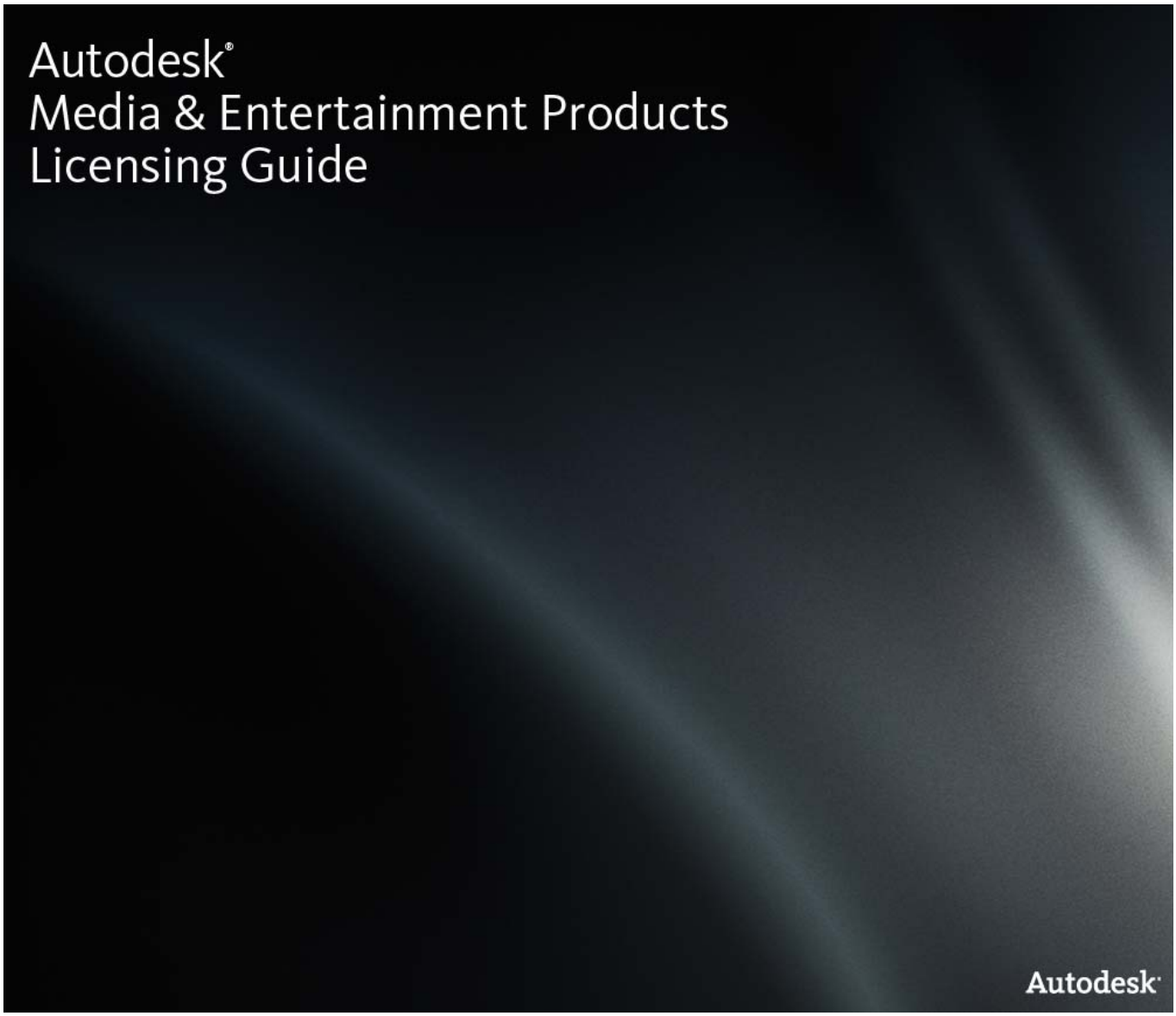
Autodesk®
Media & Entertainment Products
Licensing Guide
Autodesk

2012

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Introduction

Introduction

License Types and Behaviors

Autodesk provides two main types of licenses:

- A **stand-alone license** supports one or more Autodesk products for an individual user. Similarly, a multi-seat stand-alone license supports a specific number of users. While the software can be installed on additional computers in your facility, the licensed number of users cannot be exceeded.
- A **network license** supports a specific maximum number of users who are connected to a network. A software utility known as the Network License Manager (NLM) issues licenses to users, up to the number of licenses purchased. At this point, no more computers can run the Autodesk product until a license is returned to the NLM.

Autodesk supports dynamic product usage and license behaviors. You can purchase a specific type of behavior with a specific license and change that license at a later date without having to uninstall and reinstall the Autodesk product.

License usage types

NOTE All license types are available as stand-alone and network except for the Student Portfolio license, which is available as stand-alone only.

Commercial A license for a product that was purchased commercially.

Not for Resale A license for a product that is not sold commercially.

Educational (EDU)/Institution A license designed specifically for educational institutions.

Student Portfolio A license for students who are using an Autodesk product as part of their curriculum.

License behaviors

Trial A license that allows individuals to run a product or suite in trial mode for a specified time period, usually 30 days. The trial period starts the first time you launch the product, or one of the products in the suite. You can activate and register the license at any time, before or after the trial period expires.

Permanent Allows permanent use of an Autodesk product.

Term Extendable Allows access to an Autodesk product for a limited time. The term can be extended at any time.

Term Non-Extendable Allows access to an Autodesk product for a limited time. The term cannot be extended.

Activation

You can activate your Autodesk product either on startup or while you are running the product.

When you activate your product, you receive an activation code. If you activate through an Internet connection, your activation code is automatically retrieved from Autodesk and the product starts. If you do not have an active Internet connection, some products provide instructions for offline registration. Otherwise, you need to connect to the Internet to activate the product.

If you upgrade your product from an earlier version, you may need to provide your old serial number. For more information on activation, go to *Autodesk Licensing* and select the FAQ link.

NOTE If you are installing and using an Autodesk product on both operating systems of a dual-boot operating system, you must obtain a separate activation code for each operating system.

Registration

Depending on your product, registration is optional or required. If required, you are prompted to create an Autodesk User ID associated with an individual or company account. If registration is optional, you can choose to postpone it, and you will be reminded periodically to register. The Autodesk website where you register products is *https://registeronce.autodesk.com*.

Stand-Alone Licensing 2

Stand-Alone Licensing

Introduction to Stand-Alone Licenses

A stand-alone license authorizes a single user to use the specified Autodesk product. The product can be installed on more than one computer, but multiple instances of the same product cannot be running concurrently on different computers.

Stand-alone licensing allows you to use your Autodesk product in trial mode for a specified period, usually 30 days, from the first time you start the product. For a product suite, the trial period countdown begins when the first product is started, and it applies to all Autodesk products in the suite. You can activate your license at any time before or after the trial period expires.

The licensing process creates a license file and a minor change to the computer's file system. These changes remain on your computer when you uninstall your product. If you reinstall your Autodesk product on the same computer, the license remains valid. You do not have to reactivate the product.

Multi-Seat Stand-Alone License

A multi-seat stand-alone license allows you to install, register, and activate an Autodesk product on several computers using a single serial number. If an Internet connection is available, the software activates automatically when it is started for the first time.

A multi-seat stand-alone license can be deployed efficiently to multiple computers on a network from an image created by the Create Deployment option in the installer.

For more information about multi-seat stand-alone installation and deployments, see the *Network Administrator's Guide* for your product, which is accessible from the Installation Help link in the installer.

Manage Your Stand-Alone License

View Product License Information

You can view detailed information about your Autodesk product license, such as the license usage type and the license behavior.

To view product license information

1. Start your Autodesk product.
2. Click Help ➤ About, or About *[Product Name]*.
3. In the About window, click Product License Information.

Save License Information as a Text File

You can view detailed information about your Autodesk product and your product license (such as the license usage type and the license behavior), and then save this information as a text file for future reference.

To save license information as a text file

1. Start your Autodesk product.
2. Click Help ➤ About or About *[Product Name]*.
3. In the About window, click Product License Information.
4. In the Product License Information dialog box, click Save As.
5. In the Save As dialog box, name the file, choose a location where you want to save the file, and then click Save.
6. In the Product License Information dialog box, click Close.

Update Your Serial Number

You typically update your serial number for a stand-alone license when you purchase a new license in order to change the license type or behavior. For example, you would do this if you want to convert an educational license to a commercial license, or if you want to extend the term of a term extendable license. When you update a license, you do not need to uninstall and reinstall the product. The new license includes a new serial number that you enter into the Product License Information field.

Your serial number is located on the outside of the product packaging or in the *Autodesk Upgrade and Licensing Information* email you received when you downloaded your product.

When you register and activate your product, your serial number is submitted to Autodesk over the Internet, if a connection is available.

If you have a suite of products that use a single serial number, only the first product you register and activate displays the updated serial number. For other products to display the serial number, you must update them from the Help menu.

To update your serial number

1. Start your Autodesk product.
2. Click Help ➤ About, or About *[Product Name]*.
3. In the About window, click Product License Information.
4. In the Product License Information dialog box, click Update.
5. In the Update the Serial Number dialog box, enter your product serial number.

   NOTE If you have lost your serial number, go to *www.autodesk.com/contactus* for assistance.

6. Click OK. The updated serial number is displayed.

   NOTE In some cases, you must restart the product to display the updated serial number.

7. In the Product License Information dialog box, click Close.

Transfer Your Stand-Alone License

About the License Transfer Utility

The License Transfer Utility is used only with stand-alone licenses. It transfers a product license online from one computer to another, and ensures that the product works only on the computer that contains the license. A single license applies to all products in a product suite. When you transfer the license, any installed products of the suite are disabled on the exporting computer, and enabled on the importing computer.

For Windows-based products, you can install the License Transfer Utility from the Install Tools & Utilities tab of the installer.

IMPORTANT To transfer a license, the Autodesk product must be installed on both computers. In addition, you need an Internet connection, and an Autodesk user ID and password, available from the Autodesk Register Once website(*https://registeronce.autodesk.com*).

IMPORTANT If you are using Autodesk products on Mac OS X or Linux platforms, see your product appendix for more information on how to install and start the License Transfer Utility. After the utility is started, the procedures for exporting and importing licenses are the same on all platforms.

The License Transfer Utility is a custom stand-alone installation option. During installation, a shortcut is created. A shortcut is installed once per product, per computer.

You can transfer a license to another computer temporarily or permanently. For example, a temporary transfer enables you to use the Autodesk product on a mobile computer while your main computer is being repaired or replaced.

License transfers rely on the product serial number. Before an Autodesk license can be exported, it must be activated with the serial number and product key. During license import, a previously activated and exported license is imported to a product or suite installed with the same serial number. The activation is transferred to the importing computer, completing the license transfer.

The number of concurrent license exports allowed is equal to the number of seats you own. For example, if you own five seats you can have one export in progress at a time.

When you upgrade your Autodesk product, you can no longer perform online license transfers of the previous license.

Although the License Transfer Utility allows you to transfer your product license between computers, your license agreement may not allow the installation of an Autodesk product on more than one computer. Read your license agreement to find out whether your product license permits the use of the License Transfer Utility.

Export a License

A license is exported when the License Transfer Utility moves a product license from a computer to the online Autodesk server.

The license can be exported as public or private:

- **Public** means that anyone using the same serial number and their own user ID and password can import that license.
- **Private** means that you are reserving that license for yourself and the license can only be imported with the same serial number, user ID, and password that were used when it was exported.

If it has not been imported, a private license becomes public after 14 days.

To export a license

1. On the computer where you want to export the license, start the License Transfer Utility.
   - On a Windows computer, click Start menu and navigate to Autodesk ➤ *[Product Name]* ➤ License Transfer Utility.
   - For a Mac OS X or Linux computer, see the appendix for your product for information on how to start the License Transfer Utility.

   The Export the License dialog box displays the Autodesk product name and serial number.
2. Click Sign In.
3. On the Log In page, enter your Autodesk user ID and password and click Log In.
4. On the License Export page, confirm the export information.
5. If you want to make the license available as a public import, click Make the license available as a public import.
6. Click Export.
7. On the License Export Confirmation page, click Finish.

Import a License

A license is imported when the License Transfer Utility moves a previously exported product license from the online Autodesk server to a computer. The import action completes the license transfer process, and transfers the product activation to the importing computer. The presence of an active license allows your Autodesk product to run on that computer.

To import a license

1. On the computer where you want to import the license, start the License Transfer Utility.
   - On a Windows computer, click Start menu and navigate to Autodesk ➤ *[Product Name]* ➤ License Transfer Utility.
   - For a Mac OS X or Linux computer, see the appendix for your product for information on how to start the License Transfer Utility.

   The Import the License dialog box displays the Autodesk product name and serial number.

   NOTE If you are importing a license to replace a trial license, you will see the Update the Serial Number and Product Key dialog box. In this case, enter the required data, and then click Update.
2. In the Import the License dialog box, click Sign In.
3. On the Log In page, enter your Autodesk user ID and password and click Log In.
4. On the License Import Confirmation page, click Finish.

   The license is now imported to the computer and you can run your Autodesk product on this computer. If you want to transfer the license to another computer, repeat the export and import procedures.

Troubleshoot a Stand-Alone License Error

Preserving a License When Hardware Changes

If you replace or reconfigure hardware on the computer where your Autodesk product license resides, the stand-alone license might fail, with the result that you will not be able to use your product.

To prevent damage to your product license, use the License Transfer Utility to export your license file before changing the hardware. After the hardware change, you can import the license file back. For information about using the License Transfer Utility, see About the License Transfer Utility (page 8).

NOTE If you get a license error when you change your hardware, you may have to reactivate your license. See Activation (page 2).

Reinstalling an Operating System

If you reinstall your operating system on the computer where your Autodesk license resides, the license might fail. You will not be able to use your product. To resolve a license error in this case, you must reactivate your product. See Activation (page 2).

NOTE The following procedure is for the Windows operating system. If you are running Autodesk products on Mac OS X or Linux platforms, see your product appendix for more information.

To prevent a license error when you reinstall an operating system

NOTE If using Norton Ghost or another image utility, do not include the Master Boot Record.

1. Locate one of the following folders and make a backup copy:
   - (Windows XP) C:\Documents And Settings\All Users\Application Data\FLEXnet
   - (Windows 7/Windows Vista) C:\ProgramData\FLEXnet
2. Reinstall the operating system and reinstall the Autodesk product.
3. Paste the license folder to the same location from which you originally copied the folder in step 1.

   You can now run your Autodesk product.

Changing the System Date and Time

Your product license allows for time changes to the system clock within two days of the current time. If you set your system clock back more than two days, the next time you start your product, you will receive a message that

gives you the option of correcting the system clock. If you do not correct the system clock, you receive a license error.

To prevent a license error due to a change in system date and time, ensure that your computer's system date and time are accurate when you install and activate your Autodesk product.

Distributing a Software Image to Multiple Computers

You can use the installer's Create Deployment option to create a product installation image on your server, and make it available on your computer network. During creation of this image, you are prompted for registration information, which is stored with the image and deployed to all product installations. For more information, see the *Network Administration Guide*.

Additionally, you can manually distribute the software using the installation media that comes with your Autodesk product. However, if your computers do not have an Internet connection, make sure that the registration data for each computer matches exactly. Inconsistent registration data can cause activation failures.

NOTE The distribution of applications using "ghosting" is not recommended. It can result in incomplete installations and activation problems.

Preserving a License on a Re-imaged Computer

On a network license server, licenses are maintained on the server. No additional steps are needed to preserve network licenses.

For a stand-alone license, you need to export the license before re-imaging the computer. You can use the License Transfer Utility to export the license to the Autodesk server. After the re-imaging, import the license to the correct computer.

Network Licensing 3

Network Licensing

Planning Your Network Licensing

Understanding License Server Models

This section explains the three possible server models that support the Network License Manager. A server network can include Windows, Mac OS X, and Linux servers in any combination. Advantages and disadvantages of each model are presented to help you decide which one best suits your needs. When you purchase a network license, you specify which server model you will use.

Single License Server Model

In the single license server model, the Network License Manager is installed on a single server, so license management and activity is restricted to this server. A single license file represents the total number of licenses available on the server.

Advantages of the Single License Server Model

- Because all license management takes place on a single server, you have just one point of administration and one point of failure.
- Of the three license server models, this configuration requires the least amount of maintenance.

Disadvantage of the Single License Server Model

- If the single license server fails, the Autodesk product cannot run until the server is back online.

Distributed License Server Model

In the distributed license server model, licenses are distributed across more than one server. A unique license file is required for each server. To create a distributed license server, you must run the Network License Manager on each server that is part of the distributed server pool.

Advantages of the Distributed License Server Model

- Servers can be distributed across a wide area network (WAN); they do not need to exist on the same subnet.
- If one server in the distributed server pool fails, the licenses on the remaining servers are still available.
- If you need to replace a server in the distributed server pool, you do not need to rebuild the entire pool.
- Server replacement is easier than in a redundant server pool, where you must reactivate the entire pool.

Disadvantages of the Distributed License Server Model

- If a server in the distributed server pool fails, the licenses on that server are unavailable.
- This model can require more time for setup and maintenance than other models.

Redundant License Server Model

In the redundant license server model, three servers are configured to authenticate license files. Licenses can be monitored and issued as long as at least two license servers are still functional. The Network License Manager is installed on each server, and the license file on each server is the same.

In the redundant license server model, all servers must reside on the same subnet and have consistent network communications. (Slow, erratic, or dial-up connections are not supported.)

Advantage of the Redundant License Server Model

- If one of the three servers fails, all licenses that are managed in the server pool are still available.

Disadvantages of the Redundant License Server Model

- If more than one server fails, no licenses are available.
- All three servers must reside on the same subnet and have reliable network communications. The redundant server pool does not provide network fault tolerance.
- If one of the three servers is replaced, the complete redundant server pool must be rebuilt.
- If your Autodesk product supports license borrowing, and licenses are borrowed from a redundant license server pool, you must restart the license server after you stop the Network License Manager.

Windows System Requirements for the Network License Manager

NOTE The Network License Manager supports Ethernet network configurations only.

Hardware and software requirements for the network license server

Hardware/Software	Requirement
Operating System	Windows® 7® 32-bit Windows 7 64-bit ■ Windows 7 Home Premium ■ Windows 7 Professional ■ Windows 7 Ultimate ■ Windows 7 Enterprise
	Windows Vista ® 32-bit SP2 or later Windows Vista 64-bit SP2 or later ■ Windows Vista Enterprise ■ Windows Vista Business

Hardware and software requirements for the network license server	
Hardware/Software	**Requirement**
	■ Windows Vista Ultimate ■ Windows Vista Home Premium and Basic (32-bit) ■ Windows Vista Home Premium (64-bit)
	Windows XP 32-bit SP2 or later Windows XP 64-bit SP2 or later ■ Windows XP Home ■ Windows XP Professional
	Windows Server 32-bit SP1 or later Windows Server 64-bit SP1 or later ■ Windows 2008 Server R2 ■ Windows 2008 Server ■ Windows 2003 Server R2 ■ Windows 2003 Server
Computer/processor	Intel® Pentium® III or higher 450 MHz (minimum)
Network interface card	Compatible with existing Ethernet network infrastructure **NOTE** The Network License Manager supports multiple network interface cards, but at least one must be an Ethernet card.
Communication protocol	TCP/IP **NOTE** The Network License Manager uses TCP packet types.
Browsers	Internet Explorer® 6.1 Internet Explorer 7 Internet Explorer 8 Internet Explorer 9

Hardware and software requirements for the network license server	
Hardware/Software	**Requirement**
FLEXnet	11.9.0.0

Virtual Machine Support		
Hardware	**Virtualizer**	**Virtual OS**
Intel PC 64	Windows 2008 or Windows 2003 R2 servers running on VMware® ESX3.5 Update 3 (License Manager Only)	Vista 64-bit or 32-bit, Windows XP 32-bit, Windows 7 32-bit (Home Premium, Professional, Ultimate, and Enterprise), Windows 7 64-bit, Windows Server 64-bit or 32-bit.

Linux System Requirements for the Network License Manager

NOTE The Network License Manager supports Ethernet network configurations only.

Linux hardware and software requirements for the network license server	
Hardware/Software	**Requirement**
Operating system	Linux® 64-bit or 32-bit Red Hat® Enterprise Linux 5.0 WS (U4)
Computer/processor	Intel Pentium 3 or higher 450 MHz (minimum)
Network interface card	Compatible with existing Ethernet network infrastructure **NOTE** The Network License Manager supports multiple network interface cards, but at least one must be an Ethernet card.

Linux hardware and software requirements for the network license server	
Hardware/Software	**Requirement**
Communication protocol	TCP/IP **NOTE** The Network License Manager uses TCP packet types
FLEXnet	11.9.0.0

Mac OS X System Requirements for the Network License Manager

NOTE The Network License Manager supports Ethernet network configurations only.

Mac OS X hardware and software requirements for the network license server	
Hardware/Software	**Requirement**
Operating system	Mac OS® X version 10.5.3 and higher
Computer/processor	Intel Mac
Network interface card	Compatible with existing Ethernet network infrastructure **NOTE** The Network License Manager supports multiple network interface cards, but at least one must be an Ethernet card.
Communication protocol	TCP/IP **NOTE** The Network License Manager uses TCP packet types
Browsers	Safari 3.2.x and higher
FLEXnet	11.9.0.0

Understanding Your Network License

How Your License Works

When you start an Autodesk product, it requests a license from the license server through the TCP/IP network . If the number of available licenses has not been exceeded, the Network License Manager assigns a license to the computer, and the number of available licenses on the license server is reduced by one.

Likewise, when you exit a product, the license returns to the Network License Manager. If you run multiple sessions of an Autodesk product on an individual computer, only one license is used. When the last session is closed, the license is released.

The following three processes manage the distribution and availability of licenses:

- **License manager daemon** (*lmgrd or lmgrd.exe*) handles the original contact with the application, and then passes the connection to the vendor daemon. By using this approach, a single *lmgrd* daemon can be used by multiple software vendors to provide license authentication. The *lmgrd* daemon starts and restarts the vendor daemons as needed.
- **Autodesk vendor daemon** (*adskflex or adskflex.exe*) tracks the Autodesk licenses that are checked out and the computers that are using them. Each software vendor has a unique vendor daemon to manage vendor-specific licensing.

  NOTE If the *adskflex* vendor daemon terminates for any reason, all users lose their licenses until *lmgrd* restarts the vendor daemon or until the problem causing the termination is resolved.

- **License file** is a text file that has vendor-specific license information.

Interpreting Your License File

The network license file you receive from Autodesk contains licensing information required for a network installation. You obtain license file data when you register your Autodesk product.

The license file contains information about network server nodes and vendor daemons. It also contains an encrypted digital signature that is created when Autodesk generates the file.

The license file configures network license servers to manage licenses. When creating a deployment, the network license server name(s) are specified so that each product instance knows which server(s) to contact to obtain a license. The network license server(s) must be accessible to every user who runs one or more products that require a network license.

The following table defines each license file parameter. For more information, see the *License Administration Guide*, installed with the Network License Manager.

Definitions of license file parameters

Line	Parameter	Definition	Example
SERVER	Host Name	Host name of the server where the Network License Manager resides	LABSERVER
	Host ID	Ethernet address of the server where the Network License Manager resides	03D054C0149B
USE_SERVER	[None]		
VENDOR	Vendor Daemon	Name of the server-side Autodesk vendor daemon	*adskflex.exe*
	Port Number	Network port number reserved and assigned for use only by Autodesk products running the Autodesk vendor daemon	port=2080
PACKAGE	Name	Name of feature code group	*SERIES_1*
	Version	Internal version number reference	1.000
	COMPONENTS	List of feature codes supported in the package	COMPONENTS= "526000REVIT_9_OF\

Definitions of license file parameters			
Line	**Parameter**	**Definition**	**Example**
			51200ACD_2007_OF\ 513001INVBUN_11_OF"
	OPTIONS		OPTIONS=SUITE
	SUPERSEDE	Replacement for any existing Increment line of the same feature code from any license files on the same license server that have a date earlier than the defined Issue Date	SUPERSEDE
	SIGN	Encrypted signature used to authenticate the attributes of the license file	SIGN=0 SIGN2=0
INCREMENT	Feature Code	Product supported by the license file	51200ACD_2007_0F
	Expiration Date	Amount of time the licenses are available	permanent
	Number of Licenses	Number of licenses supported by the license file	25
	VENDOR_STRING	License usage type and license behavior of the product that is supported by the license file	COMMERCIAL
	BORROW	Definition of the license borrowing period for the licenses defined under the same increment line. In this example, the maximum period that licenses can be borrowed is 4320 hours (180 days), unless otherwise noted. License borrowing is disabled when this parameter is absent in the license file.	BORROW=4320

Definitions of license file parameters			
Line	**Parameter**	**Definition**	**Example**
	DUP_GROUP	Definition of multiple license requests when the same user and same host share the same license	DUP_GROUP=UH
	ISSUED	Date that the license file was generated by Autodesk	15-jul-2010
	Serial Number	Serial number of the Autodesk product	123-12345678
	SIGN	Encrypted signature used to authenticate the attributes of the license file	SIGN=6E88EFA8D44C

License File Examples

The Autodesk network license file contents reflect the license server configuration and the licensed products, as shown in the examples provided.

Example of a License File Not Specific to a Product

Here is an example of the contents of a license file and the parameters associated with each line:

```
SERVER
ServerName HostID USE_SERVER VENDOR
adskflex port=portnumber INCREMENT
feature_code Adskflex Version ExpDate NumberofLicenses \
  VENDOR_STRING=UsageType:Behavior
  BORROW=4320 SUPERSEDE \
  DUP_GROUP=DupGrp ISSUED=IssueDate SN=SerialNumber SIGN=
  \
```

Example of a License File for a Single or Distributed Server

Here is an example of a completed license file for a single or distributed license server model:

```
SERVER
XXHP0528 0019bbd68993USE_SERVER VENDOR
adskflex port=2080 INCREMENT
57600ACD_2009_0F adskflex 1.000 permanent 5 \
VENDOR_STRING=commercial:permanent BORROW=4320 SUPERSEDE
\
DUP_GROUP=UH ISSUED=09-Jan-2008 SN=123-12345678 SIGN="1393
 \
E368 816E D417 C1CD 7DBD 7B90 1354 D6F0 48FE EBB8 9C84 C3AF
 \
7D79 BEE1 0181 0655 76FF 996C B707 14B5 D4DE A3FE 0B2D 2D36
 \
057C A579 7866 26BF 44E2" SIGN2="1280 943B 53A7 9B93 E00B
 D967 \
D821 BD37 BE6D B78A F074 B223 88AA 242C DD0A 1292 D56F 4108
 \
62CD FA35 E365 0736 A011 7833 8B35 7BFF DAD8 34A8 452F
2EB4"
```

Example of a License File for a Redundant Server

Here is an example of a completed license file for a redundant license server model:

```
SERVER
CCN12378042 001cc4874b03 27005SERVER
XXHP0528 0019bbd68993 27005SERVER
CCN12378043 001cc4874b10 27005USE_SERVERVENDOR
adskflex port=2080INCREMENT
57600ACD_2009_0F adskflex 1.000 permanent 5 \
VENDOR_STRING=commercial:permanent BORROW=4320 SUPERSEDE
\
DUP_GROUP=UH ISSUED=10-Jan-2008 SN=123-12345678 SIGN="11C4
 \
CA79 07FC 7AD0 409A 6E04 6E98 D76C 197C 0416 076C B211 1CDD
```

```
 \
D0AB 698B 16BF 7A0E D4F8 1CFE 2985 644F 64CD CECE 0DDB 5951
 \
3262 7C31 13A8 F08F 55B2" SIGN2="19A6 FDA3 2ED5 5301 8675
 7B81 \
1B0E 451B 19F1 1A99 C8E9 CBA6 8CB3 6AC3 8B38 1519 13F2 2373
 \
82AE 55E5 1A25 4952 4458 F3A2 6F28 D25D 1DC0 E066 209B
0953"
```

NOTE The redundant server model requires the addition of a port number (the default is 27005) for each server.

Example of a License File for Combined Autodesk Product Versions

You can combine a license file for different releases of the same Autodesk product or for different Autodesk products, and run all products from one license server.

Here is an example of the contents of a combined license file for AutoCAD 2008 and AutoCAD 2009:

```
SERVER
XXHP0528 0019bbd68993USE_SERVER VENDOR
adskflex port=2080 INCREMENT
57600ACD_2009_0F adskflex 1.000 permanent 5 \
VENDOR_STRING=commercial:permanent
BORROW=4320 SUPERSEDE \
DUP_GROUP=UH ISSUED=09-Jan-2008 SN=123-12345678 SIGN="1393
 \
E368 816E D417 C1CD 7DBD 7B90 1354 D6F0 48FE EBB8 9C84 C3AF
 \
7D79 BEE1 0181 0655 76FF 996C B707 14B5 D4DE A3FE 0B2D 2D36
 \
057C A579 7866 26BF 44E2" SIGN2="1280 943B 53A7 9B93 E00B
 D967 \
D821 BD37 BE6D B78A F074 B223 88AA 242C DD0A 1292 D56F 4108
 \
62CD FA35 E365 0736 A011 7833 8B35 7BFF DAD8 34A8 452F
2EB4"
INCREMENT 54600ACD_2008_0F adskflex 1.000 permanent 3 \
```

```
VENDOR_STRING=commercial:permanent
BORROW=4320 SUPERSEDE \
DUP_GROUP=UH ISSUED=09-Jan-2008 SN=123-12345678 SIGN="1E6E
 \
4B61 5712 4766 92A0 6782 9EF4 3F47 56A1 1F38 6DE8 C0C7 90AC
 \
7289 152E 0EA2 CC0D 3F10 577A 0489 CEB6 10D5 FBCC B552 0C9D
 \
5966 91A6 59F0 2788 FACE" SIGN2="1DDF 3B9D 3392 71D5 AB08
 7E05 \
8497 111E 092F 0E54 8DC2 2BED 17C2 2CC1 981B 0EC2 BC15 8F00
 \
C79A ABFD 2136 BABA 2EDF E941 EA53 32C6 597F F805 5A8A
599A"
```

Package License File Types and Examples

Autodesk offers a package license file option, which allows the use of a suite of products that are packaged and sold together. The package license file contains a set number of licenses for four different versions of your software. Running an instance of any one of the versions uses one license in the package. Packaged license files support prior versioning for subscription users. Package license files operate under the following guidelines:

- Package license files come with the current version of the software and three previous versions of the same product.
- License files can be combined with license files for different products. For more information about combining license files, see Example of a Package License File for Combined Autodesk Product Versions (page 28).
- Package license files cannot be combined with non-package license files for product versions contained in the package. For example, you cannot combine an *Autodesk* 2009 package license file with a regular license file for an *Autodesk Product* 2008, 2007, or 2006.
- Both the PACKAGE and INCREMENT sections of the license are required for licensing to work properly. When you combine license files, be sure to include both of these sections.
- License borrowing, option files, and licensing cascading work the same for package licenses as they do for regular license files.
- A new license file supersedes an older one.

Example of a Package License File for a Single or Distributed Server

Here is an example of a completed package license file for a single or distributed license server model:

```
SERVER
Server1 1a34567c90d2USE_SERVER VENDOR
adskflex port=2080 PACKAGE
SERIES_1 adskflex 1.000 COMPONENTS="54700REVIT_2009_0F \
54600ACD_2009_0F 51300INVBUN_11_0F" OPTIONS=SUITE SUPERSEDE
 \
ISSUED=09-Jan-2008 SIGN="1707 9EAC CBCB 2405 692E 4A89 \
AA26 30CC 2AC2 D6B3 A61B AB5E 492E 3EBD 0B48 4E75 193A
DA82" \
FC45 C009 E360 944A 14BA E99C 9B24 5A1B 4A44 083A BE5F 3827
 \
SIGN2="004A FC90 AB47 3F6B 59BC 0E6D 6681 6971 A76A BA52
98E2 \
5671 26B3 0E78 791B 109F 0591 7DC3 F09F 4D8D 4FB7 E341 4A03
 \
CD68 1D77 27F8 8555 9CF7 DEDD 9380"
INCREMENT SERIES_1 adskflex 1.000 permanent 100 \
VENDOR_STRING=commercial:permanent BORROW=4320 DUP_GROUP=UH
 \
SUITE_DUP_GROUP=UHV SN=123-12345678 SIGN="1707 9EAC CBCB
\
692E 4A89 FC45 C009 E360 944A 14BA E99C 9B24 5A1B 4A44 BE5F
 \
3827 AA26 30CC 2AC2 D6B3 A61B AB5E 492E 3EBD 0B48 DA82" \
SIGN2="004A FC90 AB47 3F6B 59BC 0E6D 6681 6971 A76A BA52
\
5671 26B3 0E78 791B 109F 0591 7DC3 F09F 4D8D 4FB7 E341 4A03
 \
CD68 1D77 27F8 8555 9CF7 DEDD 9380"
```

Example of a Package License File for a Redundant Server

Here is an example of a completed package license file for a redundant license server model:

```
SERVER
1a34567c90d2 27005SERVER
2a34567c90d2 27005SERVER
3a34567c90d2 27005USE_SERVERVENDOR
adskflex port=2080PACKAGE
64300ACD_F adskflex 1.000 COMPONENTS="57600ACD_2009_0F \
54600ACD_2008_0F 51200ACD_2007_0F 48800ACD_2006_0F" \
OPTIONS=SUITE SUPERSEDE ISSUED=27-May-2008 SIGN="1092 05D8
 \
A206 276B 2C84 EFAD ACA5 C54B 68A4 653E C61F 31DE C8CE B532
 \
CFBB 0006 5388 347B FDD6 A3F4 B361 7FD4 CDE4 4AAC 0D11 B0EF
 \
4B44 BFD6 3426 97DD" SIGN2="0670 B01A D060 0069 FF25 F1CD
 D06B \
314E E7C9 3552 5FFA 4AC7 28A7 C897 F56A 19BB FB1C 754E 6704
 \
DEEA AC4E F859 2E9B 64B6 0DD0 9CCE 9556 269F EAC0 2326"
INCREMENT 64300ACD_F adskflex 1.000 permanent 50 \
VENDOR_STRING=commercial:permanent BORROW=4320 SUPERSEDE
\
DUP_GROUP=UH SUITE_DUP_GROUP=UHV ISSUED=27-May-2008 \
SN=399-99999999 SIGN="1B5B 8D70 4CAD 32E5 9CA2 82E0 5C47
291C \
35AB 9B9C 5B3E 5067 F61B 4139 1B32 0716 1FD3 5105 A991 B78E
 \
9D1E 63AB BC23 0D1E B70C 2A05 E1C1 F605 ABB1 2EA8"
SIGN2="01D6 \
31F5 2951 4500 E5C8 058F 7490 9789 9EF4 CBED DA27 5F06 6780
 \
9033 2018 0C3B E1E0 3580 E60E C2BB B4AB 8D6A 4245 3059 8CA6
 \
2EFE DFAE 027F 2ABE 3F2B"
```

Example of a Package License File for Combined Autodesk Product Versions

Here is an example of a completed package license file for combined Autodesk product versions:

```
SERVER
servername 123456789111USE_SERVER VENDOR
adskflex port=2080 PACKAGE
64300ACD_F adskflex 1.000 COMPONENTS="57600ACD_2009_0F \
54600ACD_2008_0F 51200ACD_2007_0F 48800ACD_2006_0F" \
OPTIONS=SUITE SUPERSEDE ISSUED=25-Jun-2008 SIGN="03EF DE18
 \
8046 0124 4EA4 6953 F82D 3169 7C24 D0DE E58E 8168 FFA3 D891
 \
B43B 08D8 7E7F C6ED CBCC FE2A BB0A 4566 C2AE F1C1 D373 8348
 \
E6E3 884A E398 1C78" SIGN2="07AC D696 8844 D19F AB00 8B75
 53A3 \
2F76 91DF AED0 3231 1506 0E6B ADC6 C3B8 1797 93B5 9756 8C0F
 \
8811 56E6 B2BA 0523 FE2E 82B7 1628 076F 173B F37C 7240"
INCREMENT 64300ACD_F adskflex 1.000 permanent 2 \
VENDOR_STRING=commercial:permanent BORROW=4320 SUPERSEDE
\
DUP_GROUP=UH SUITE_DUP_GROUP=UHV ISSUED=25-Jun-2008 \
SN=399-99999999 SIGN="1CCB E88D B819 8604 06FA 9AEE 42F1
CBEA \
37B9 3CFA A0A8 697F 9CB1 8354 6256 05ED 69D4 D2FF D512 6A2E
 \
D5DD B722 EF5B 3172 BA95 4625 F8D3 DD24 BB39 6A58"
SIGN2="0DFF \
FA6F C378 20E0 2622 BE52 B434 F99F 2681 2B93 64F2 CE0C 7F4A
 \
7024 B3D1 051A 6920 72BD DE35 8920 E6A1 C8D6 AF23 7BE7 CC91
 \
6916 70B1 9E80 AB07 1644"
PACKAGE 64800INVPRO_F adskflex 1.000 \
COMPONENTS="59600INVPRO_2009_0F \
55300INVPRO_2008_0F 51400INVPRO_11_0F 49000INVPRO_10_0F"
\
OPTIONS=SUITE SUPERSEDE ISSUED=25-Jun-2008 SIGN="1306 5990
```

```
 \
F8A1 56FB 1D8A 9DA7 D6AE 8E9E F6EC 2862 367A 36E2 C5FB E6E1
 \
4AAA 0128 8C2D 95FD 09B2 ABA1 6F98 A0A3 70DE 3220 6835 7E51
 \
3849 9D81 8BDC 9DC1" SIGN2="0021 AA08 F2E7 8AEB 5345 341A
 7E42 \
3001 B8C5 DFC2 6EB8 87C5 C04A AE43 A10F 1DA1 EF8A F0FA 10F5
 \
AC81 1E22 789F A18D 650F 6BBB 563A BDA5 DD1C 82EC 27F6"
INCREMENT 64800INVPRO_F adskflex 1.000 permanent 2 \
VENDOR_STRING=commercial:permanent BORROW=4320 SUPERSEDE
\
DUP_GROUP=UH SUITE_DUP_GROUP=UHV ISSUED=25-Jun-2008 \
SN=399-99999966 SIGN="0BE4 51F4 570C DC48 5E66 F952 629E
EDF0 \
019C 6FF7 0509 1FF0 D4FB 3B16 1981 073F 31EC A241 8CB3 8782
 \
E655 00C6 E097 D5EF B0D8 67D3 199D 699D 2E09 B16F"
SIGN2="1254 \
3E37 0CE4 F42D B7CD 858C 92FC A963 5274 770F 9354 FE29 E117
 \
205D C632 0C4E AEC0 7501 9D9E FFEB D84D F154 16A1 E120 339A
 \
FDBF 3F07 4477 B8B3 5DA4"
```

Losing Your Connection to the License Server

When an Autodesk product is running, it communicates with the license server at regular intervals using a method known as the “heartbeat” signal. If the heartbeat signal is lost, the server tries to reconnect. If the server cannot reconnect, the user receives a license error.

If the product stops working because it has lost a connection to the server, you must shut down the product, and then restart it. Most Autodesk products give you the opportunity to save open documents before shutting down. If the problem causing the original loss of the heartbeat signal is resolved and licenses are available on the server, you can restart your Autodesk product.

Running the Network License Manager

The Network License Manager is used to configure and manage the license servers. When you create a deployment, the installer prompts you for information about the license manager, such as license server model and server name.

Install the Network License Manager

For Windows, install the Network License Manager from the Install Tools & Utilities panel of the Autodesk installer. If your product is available on Mac OS X and Linux, see your product appendix to this guide.

IMPORTANT Do not install the Network License Manager on a remote drive. When you install the Network License Manager files, you must provide a path to a local drive. You must specify the drive letter; the universal naming convention (UNC) is not permitted.

You can install the Network License Manager before or after you install the products that will use it. Network License Manager must configure the license servers before any products can obtain licenses and start running.

If an earlier version of the Network License Manager is already installed on the computer, you should upgrade by installing the new Autodesk Network License Manager into the folder where the old version was located.

Obtain the Server Host Name and Host ID

Autodesk uses the server host name, host ID, and product serial number to generate a license file.

To obtain the information, use one of the following procedures.

Windows Command Prompt Procedure for Host Name and ID

To obtain the host name and ID at the Windows command prompt

1. At the Windows command prompt, enter **ipconfig /all**
2. Record the Host Name and Physical Address line. Eliminate dashes from the physical address. This is your twelve-character host ID.

   NOTE If your server has more than one network adapter, select the one that corresponds to a physical network adapter. View the Description field above each physical address. If there is more than one physical network adapter, it does not matter which one you use. Devices such as VPN adapters, PPP adapters, and modems are not valid.

3. Close the Windows command prompt.

LMTOOLS Procedure for Host Name and ID

To obtain the host name and ID using the LMTOOLS utility

IMPORTANT Do not run LMTOOLS on a remote computer.

You should be logged in with Administrator rights when working with the LMTOOLS utility.

1. Click Start ➤ All Programs ➤ Autodesk ➤ Network License Manager ➤ LMTOOLS Utility.
2. In the LMTOOLS utility, click the Systems Settings tab.
3. Locate the Computer/Hostname box. Copy the host name and paste the information into a text editor.
4. Locate the Ethernet Address box. The 12-character Ethernet address is the host ID.

   NOTE If your server has more than one Ethernet adapter, select one that corresponds to a physical network adapter. If you are using a Mac OS X computer with more than one network card, you must use the address of the primary network card.

5. Close LMTOOLS.

Mac or Linux Terminal Window Procedure for Host Name and ID

To obtain the host name and ID using the Mac OS X or Linux terminal window

1. Launch a Terminal window.
2. Go to the directory where lmutil is installed.
3. Retrieve the host name by entering the following in Terminal:

   ```
   <prompt>./lmutil lmhostid -hostname
   ```

   The host name is displayed.
4. Retrieve the host ID by entering the following in Terminal:

   ```
   <prompt>./lmutil lmhostid
   ```

   The twelve-character host ID is displayed.
5. Close the Terminal Window.

Configure a License Server

You configure a license server to manage your Autodesk product licenses.

IMPORTANT If you have a firewall between the license server(s) and the client computers, you need to open some TCP/IP ports on the server for license-related communication. Open port 2080 for *adskflex*, and open ports 27000 through 27009 for *lmgrd*.

Configure the license server using one of the following procedures.

Windows License Server Configuration Procedure

To configure a license server with LMTOOLS

You should be logged in with Administrator rights when working with the LMTOOLS utility.

NOTE Before performing any system maintenance on your license server, see Stop and Restart the License Server (page 43).

1. Click Start ➤ All Programs ➤ Autodesk ➤ Network License Manager ➤ LMTOOLS Utility.
2. In the LMTOOLS utility, on the Service/License File tab, make sure the Configure Using Services option is active.
3. Click the Config Services tab.
4. In the Service Name list, select the service name you want to use to manage licenses.

   By default, the service name is *Flexlm Service 1*. If FLEXnet is managing other software on your computer in addition to Autodesk, you can change the service name to avoid confusion. For example, you can rename *Flexlm Service 1* to *Autodesk Server1*.

   NOTE If you have more than one software vendor using FLEXnet for license management, the Service Name list contains more than one option. Make sure that only one Autodesk service is listed.

5. In the Path to Lmgrd.exe File field, enter the path to the Network License Manager daemon (*lmgrd.exe*), or click Browse to locate the file.

   By default, this daemon is installed in the *C:\Program Files\Autodesk Network License Manager* folder.
6. In the Path to the License File box, locate or enter the path.

   This is the path to the license file obtained through autodesk.com or the location where you placed the license file if you obtained it offline.
7. In the Path to the Debug Log File box, enter a path to create a debug log, or click Browse to locate an existing log file.

   It is recommended that you save to the *C:\Program Files\Autodesk Network License Manager* folder. The log file must have a *.log* file extension. For new log files, you must enter the *.log* extension manually.
8. To run *lmgrd.exe* as a service, select Use Services.
9. To start *lmgrd.exe* automatically when the system starts, select Start Server at Power Up.
10. Click Save Service to save the new configuration under the service name you selected in step 4. Click Yes when prompted if you would like to save the settings to the service.

11 Click the Start/Stop/Reread tab and do one of the following:
   - If a service has not yet been defined for Autodesk, click Start Server to start the license server.
   - If a service for Autodesk is already defined and running, click ReRead License File to refresh the Network License Manager with any changes made to the license file or options file.

   The license server starts running and is ready to respond to client requests.

12 Close LMTOOLS.

Mac OS X License Server Configuration Procedure

To configure automatic start-up of your Mac OS X license server

Some Autodesk products provide a script to automate some of this procedure. See your product appendix to this guide for more information.

Before configuring your license server for Mac OS X, ensure that the following steps have been completed:

- You have installed the Autodesk Network License Manager which contains the following files: *lmgrd*, *adskflex*, and *lmutil*.
- You have received the network license file from Autodesk that contains the product licenses; for example, *productlicense.lic*.

NOTE Before performing any system maintenance on your license server, see Stop and Restart the License Server (page 43).

---

1 Create a directory titled *NLM* under the home directory; for example, */Users/<user id>/NLM*.

2 Move the following files: *lmgrd*, *adskflex*, *lmutil*, and your product license file (*.lic*) into the *NLM* directory created in Step 1.

3 If it does not already exist, create the directory *StartupItems* under */Library* using the *sudo* command. For example, *sudo mkdir StartupItems*.

4 Create a startup item directory; for example, */Users/<user id>/adsknlm*.

5 Create an executable script file; for example, *adsknlm,* by entering the following in Terminal:

   NOTE The executable file name must be the same as the directory name.

```
#!/bin/sh
./etc/rc.common
StartService()
{
ConsoleMessage
"Starting Autodesk Network License Manager"
/Users/<user id>/NLM/lmgrd -c\
/Users/<user id>/NLM/productlicense.lic -l\
/Users/<user id>/NLM/debug.log
}
StopService()
{
ConsoleMessage
"Stopping Autodesk Network License Manger"
/Users/<user id>/NLM/lmutil lmdown -q -all -force
}
RestartService()
{
ConsoleMessage
"Restarting Autodesk Network License Manger"
/Users/<user id>/NLM/lmutil lmreread
}
RunService "$1"
```

6 Grant the executable permission to the script by entering the following in Terminal:

```
chmod +x adsknlm
```

7 Create a property list file named *StartupParameters.plist* and add it to the directory by entering the following in Terminal:

```
{
Description   ="Autodesk Network License Manager";
Provides   =("adsknlm")OrderPreference   ="None";
Messages={start=
"Starting Autodesk Network Manager Service";
stop=
"Stopping Autodesk Network Manager Service";
};}{
```

8 Move the startup item directory to */Library/StartupItems/* and modify your directory permission by entering the following in Terminal:

NOTE For security reasons your startup item directory should be owned by root, the group should be set to wheel, and the permission for the directory should be 755.

```
sudo
mv /Users/<user id>/adsknlm/ /Library/StartupItems/sudo
chown root /Library/StartupItems/adsknlm/sudo
chgrp wheel /Library/StartupItems/adsknlm/sudo
chmod 755 /Library/StartupItems/adsknlm/sudo
chown root /Library/StartupItems/adsknlm/*sudo
chgrp wheel /Library/StartupItems/adsknlm/*
```

9 Your resulting directory should look like this:

```
drwxr-xr-x
4 root wheel 136 Jul 31 01 01:50drwxr-xr-x
3 root wheel 102 Jul 30 01 21:59-rw-r--r--
1 root wheel 204 Jul 30 20:16
StartupParameters.plist-rwxr-xr-x
1 root wheel 417 Jul 31 00:45 adsknlm
```

10 Reboot your Mac and verify in the *debug.log* file (*/Users/<user id>/NLG/*) that the *lmgrd* and *adskflex* start up successfully.

Linux License Server Configuration Procedure

To configure automatic start-up of a Linux license server

NOTE Before performing any system maintenance on your license server, see Stop and Restart the License Server (page 43).

Before configuring your license server for Linux, ensure that the following steps have been completed:

- You have installed the Autodesk Network License Manager which contains the following files: *lmgrd*, *adskflex*, and *lmutil*.
- You have received the network license file from Autodesk that contains the product licenses; for example, *productlicense.lic*.

1 Extract the FLEXnet IPv4 server files into the following directory: */home/<user id>/flexlm11.7*.

NOTE Replace *<user id>* with your user id, not a root user id.

2 Copy the *.lic* file into the *flexlm11.7* directory created in Step 1.

3 Open a terminal window in root mode.

4 Go to the directory */etc/*.

5 Locate the *rc.local* file.

6 Edit the *rc.local* file and start *lmgrd* by entering the following commands in the terminal window:

NOTE Replace *acad.lic* with your license file name.

7
```
/bin/su <user id> -c 'echo starting lmgrd>\
/home/<user id>/flexlm11.9/boot.log'

/usr/bin/nohup/bin/su <user id> -c 'umask 022;\
/home/<user id>/flexlm11.9/lmgrd -c\
/home/<user id>/flexlm11.9/acad.lic >> \
/home/<user id>/flexlm11.9/boot.log '
/bin/su <user id> -c 'echo sleep 5 >> \
/home/<user id>/flexlm11.9/boot.log '

/bin/sleep 5

/bin/su <user id> -c 'echo lmdiag >>\
/home/<user id>/flexlm11.9/boot.log '
/bin/su <user id> -c '/home/<user id>/flexlm11.7/lmutil
 lmdiag -n -c\
/home/<user id>/flexlm11.9/acad.lic >> \
/home/<user id>/flexlm11.9/boot.log '
/bin/su <user id> -c 'echo exiting >>\
/home/<user id>/flexlm11.9/boot.log '
```

8 Save the edited *rc.local* file.

9 Reboot your machine and verify that the *lmgrd* and *adskflex* have started by doing one of the following:

- During the reboot, look for the message that the license server has started.
- Check the *boot.log* file created in */home/<user id>/flexlm11.7/* to see if *lmgrd* and *adskflex* have started.

Uninstall a Windows Network License Manager

For Mac and Linux platforms, see your product appendix to this guide.

IMPORTANT Before uninstalling the Network License Manager, you must stop the LMTOOLS utility.

To uninstall the Network License Manager on Windows

1. Click Start, and then in the list of programs, click Autodesk ➤ Network License Manager ➤ LMTOOLS Utility.
2. In the LMTOOLS utility, click the Start/Stop/Reread tab, and then click Stop Server.
3. Close LMTOOLS.
4. In the Windows Control Panel, locate Autodesk Network License Manager in the list of programs, and uninstall it by clicking Remove or Uninstall.
5. If prompted, restart your computer.

NOTE You must manually delete files that you created for use with the Network License Manager, such as log files, license files, and the options file. These files are not automatically deleted when you uninstall the Network License Manager.

Using Other Features of Network Licensing

License Borrowing

If you are using a network-licensed version of your Autodesk product and your network administrator supports the license borrowing feature, you can borrow a product license from your network license server to use the Autodesk product for a specified time when your computer is not connected to the network. Your license is automatically returned to the license server at the end of the day on the return date you set when you borrow the license. You can also return a license early. The maximum borrowing period is six months.

NOTE License borrowing does not apply to stand-alone licenses.

NOTE A limited number of licenses are available for borrowing. If you try to borrow a license and are notified that no licenses are available, see your network administrator for help.

Borrow a License

With a borrowed license, you can run your Autodesk product with your computer disconnected from the network until your borrowing period ends. If you don't remember when a license expires, you can check the date by placing your cursor over the Borrowing icon in your Autodesk product's status tray or by clicking Help ➤ About and consulting the Product License Information dialog box.

When the borrowing period expires, the borrowed license is automatically returned to the license server. When your computer is reconnected to the network, you can run your Autodesk product from the network or borrow a license again.

Interaction with Other License-Borrowing Tools

Using the license-borrowing feature in your Autodesk product is the recommended way to borrow a license. Some third-party borrowing tools may also be available to you, but these tools are not supported or compatible with the license-borrowing feature in your Autodesk product. Other third-party or legacy license-borrowing tools that may be available to you are the Autodesk License-Borrowing utility (shipped with Autodesk products) and the borrowing feature in LMTOOLS utility, a component of the Autodesk Network License Manager on Windows servers.

If another license-borrowing tool is active when you attempt to use the license borrowing feature, you should proceed as follows to borrow a license for your Autodesk product:

- If you run the Autodesk License-Borrowing utility that shipped with your Autodesk product and then turn on the borrowing flag for the Adskflex option or the All option, a license can be borrowed when you start your Autodesk product. However, you cannot return a license until you exit and then restart your Autodesk product.
- On a Windows server, if borrowing is set in the LMTOOLS utility for all products, you can either use the other tool to borrow licenses for your Autodesk product, or stop the borrowing process in LMTOOLS utility, and then use the license-borrowing feature in your Autodesk product.
- If borrowing is set in LMTOOLS utility for non-Autodesk products only, you must stop the borrowing process in LMTOOLS utility. You can then use the license-borrowing feature to borrow licenses for your Autodesk product. If you do not stop the borrowing process in LMTOOLS utility, the license borrowing feature will not function.

To borrow a license using the Tools menu

This option is not available in all Autodesk products.

1. Click Tools menu ➤ License Borrowing ➤ Borrow License.
2. In the Borrow a License window, on the calendar, click the date when you want to return the license.

   This date must be within the valid date range set by your network administrator. The valid date range is displayed in this window.
3. Click Borrow License.
4. In the License Borrowed message, click OK. The license is borrowed, and you can now use your Autodesk product with your computer disconnected from the network.

   NOTE You can verify that your license is borrowed by placing your cursor over the Borrowing icon in the status tray, which is in the lower-right corner of your Autodesk product.

To borrow a license using the Help menu

1. Click Help ➤ About ➤ Product Information.
2. In the Product License Information window, click Borrow License.
3. In the Borrow a License window, on the calendar, click the date when you want to return the license.

   This date must be within the valid date range set by your network administrator. The valid date range is displayed in this window.
4. Click Borrow License.
5. In the License Borrowed message, click OK. The license is borrowed, and you can now use the Autodesk product with your computer disconnected from the network.

BORROWLICENSE Command

Use this command to borrow a product license from the network license server so that you can run the Autodesk product disconnected from the network.

Tools menu: License Borrowing ➤ Borrow License

Help menu: About ➤ Product Information ➤ Borrow License

Command line: **borrowlicense**

The Borrow a License window is displayed, presenting the following options:
Calendar Sets the date when you plan to return a borrowed license. The return date must be within the range specified by your network administrator.

Borrow a License Borrows the license from the network license server based on the specified return date .

Cancel Cancels the borrowing action; no license is borrowed.

Return a License

Your borrowed network license is automatically returned to the network license server on the day that the license expires. You can return a license earlier than the expiry date, but to do this, your computer must be connected to the network license server.

Once a borrowed license is returned, you can borrow a license again as long as your computer is connected to the network license server and a license is available on the server.

To return a borrowed license early, do one of the following:

- Click Tools menu ➤ License Borrowing ➤ Return License Early.
- Click Help menu ➤ About ➤ Product Information. In the Product License Information dialog box, click Return License, and then click Yes.
- In the status tray, right-click the License Borrowing icon. Click Return License Early.

NOTE To use the status tray to return a borrowed license early, the display settings for the status tray must be turned on. To turn on the display settings, right-click an empty area on the status bar. Click Tray Settings.

Your license is returned to the network license server.

To check the license expiration date, do one of the following:

- In the status tray, right-click the License Borrowing icon.
- Click Help menu ➤ About ➤ Product Information. In the Product License Information dialog box, see the License Expiration Date.

RETURNLICENSE Command

Use this command to return a borrowed Autodesk product license earlier than the return date specified when you borrowed the license.

Tools menu: License Borrowing ➤ Return License

Help menu: About ➤ Product Information ➤ Return License

Status tray: Right-click the License Borrowing icon. Click Return License Early.

Command line: **returnlicense**

FLEXnet Configuration Tools

The Network License Manager uses FLEXnet® license management technology from Flexera Software™. FLEXnet provides administrative tools that help to simplify management of network licenses. You can use FLEXnet tools to monitor network license status, reset licenses lost during a system failure, troubleshoot license servers, and update existing license files.

Windows Utilities for License Server Management

FLEXnet provides two utilities for managing the license server. These tools are located in the *C:\Program Files\Autodesk Network License Manager* folder:
LMTOOLS Utility (lmtools.exe) Provides a Microsoft Windows graphical user interface for managing the license server.

lmutil.exe Provides a set of command-line options for managing the license server.

You can use LMTOOLS or *lmutil.exe* to perform the following server management tasks:

- Start, stop, and restart the server.
- Configure, update, and reread the license file.
- Diagnose system or license problems.
- View server status, including active license status.

Stop and Restart the License Server

Before you can perform any system maintenance on your license server (including uninstalling the Autodesk License Manager) you must stop the license server. When you have completed maintenance, you can restart the license server.

Windows License Server Restart Procedures

To stop a Windows license server

You should be logged in with Administrator rights when working with the LMTOOLS utility.

1. Click Start ➤ All Programs ➤ Autodesk ➤ Network License Manager ➤ LMTOOLS Utility.
2. In the LMTOOLS utility, click the Service/License File tab.
3. Select the Configure Using Services option.
4. Select the service name for the license server you want to stop manually.
5. Click the Start/Stop/Reread tab.
6. Click Stop Server.
7. Close LMTOOLS.

To restart a Windows license server

You should be logged in with Administrator rights when working with the LMTOOLS utility.

1. Click Start ➤ All Programs ➤ Autodesk ➤ Network License Manager ➤ LMTOOLS Utility.
2. In the LMTOOLS utility, click the Service/License File tab.
3. Select the Configure Using Services option.
4. Select the service name for the license server you want to start manually.
5. Click the Start/Stop/Reread tab.
6. Click Start Server to restart the license server.

Mac OS X License Server Restart Procedures

Different procedures are required for regular and automatic license servers. Both versions are provided here.

To stop a Mac OS X license server

Enter the following in Terminal:

```
./lmutil lmdown -q -force
```

To restart a Mac OS X license server

Enter the following in Terminal:

```
./lmgrd-c acad.lic-1 debug.log
```

To stop an automatic Mac OS X license server

Enter the following in Terminal:

```
sudo
/sbin/SystemStarter stop adsknlm
```

To restart an automatic Mac OS X license server

Enter the following in Terminal:

```
sudo
/sbin/SystemStarter restart adsknlm
```

Linux License Server Restart Procedures

To stop a Linux license server

Enter the following in Terminal:

```
./lmutil lmdown -q -force
```

To restart a Linux license server

Enter the following in Terminal:

```
./lmgrd -c acad.lic -l debug.log
```

NOTE Replace *acad.lic* with your license file name and *debug.log* with your log file name.

Update FLEXnet from a Previous Version

Beginning with this release, Autodesk products require FLEXnet version 11.9.0.0 or later. If you are currently using an earlier version of FLEXnet, you need to update.

NOTE If the server where you plan to install the Autodesk Network License Manager has FLEXnet installed for another product, make sure that the version of *lmgrd.exe* (Windows) or *lmgrd* (Mac or Linux) is the most current version.

Windows Procedures to Update FLEXnet

To determine the installed version of FLEXnet, you need to verify the version of the following files:

- *lmgrd.exe*
- *lmtools.exe*
- *lmutil.exe*
- *adskflex.exe*

To verify the file version of Windows tools

You should be logged in with Administrator rights when working with the LMTOOLS utility.

1. Click Start ➤ All Programs ➤ Autodesk ➤ Network License Manager ➤ LMTOOLS Utility.
2. In LMTOOLS utility, click the Utilities tab.
3. Enter the location of the file, or click the Browse button to locate the file and click Open. The file location should look something like this:

   C:\Program Files\Autodesk Network License Manager\lmutil.exe
4. Click Find Version.

   The version number of the file you selected is displayed. If necessary, use the following procedure to update your version of FLEXnet.

To update FLEXnet in Windows

You should be logged in with Administrator rights when working with the LMTOOLS utility.

1. Back up your license files.
2. Click Start ➤ All Programs ➤ Autodesk ➤ Network License Manager ➤ LMTOOLS Utility.
3. In the LMTOOLS utility, click the Start/Stop/Reread tab.
4. Click Stop Server.
5. Close LMTOOLS.
6. Note the location where the Network License Manager is installed and then uninstall the Network License Manager. For details about uninstalling the Network License Manager, see Uninstall a Windows Network License Manager (page 37).
7. Install the Network License Manager. For details about installing the Network License Manager to the same location as the previous version, see Install the Network License Manager (page 30).
8. Do one of the following:
   - (Windows XP) Click Start ➤ Programs ➤ Autodesk ➤ Network License Manager ➤ LMTOOLS.
   - (Windows 7/ Windows Vista) Double-click the LMTOOLS icon on the desktop.
9. In the LMTOOLS utility, click the Start/Stop/Reread tab.
10. Click Start Server.
11. Close LMTOOLS.

Mac OS X and Linux Procedures to Update FLEXnet

To determine the installed version of FLEXnet, you need to verify the version of the following files:

- *lmgrd*
- *lmutil*
- *adskflex*

NOTE Version 11.9.0.0 of the FLEXnet license manager that ships with Autodesk products is backwards compatible, and will administer licenses for products from versions 2002 through 2012. Please note that Autodesk products older than version 2005 are no longer supported.

To verify the version of Mac OS X or Linux tools

You should be logged in with the same user ID you used when installing the FLEXnet files, for example, */Users/<userid>/adsknlm* (Mac OS X) or */home/<userid>/adsknlm* (Linux).

Enter the following commands in the terminal window/prompt:

```
<prompt>./lmutil -v
<prompt>./lmgrd -v
<prompt>./adskflex -v
```

The output of each command will look similar to this example:

```
Copyright
© 1989-2010 Macrovision Europe Ltd. And/or Macrovision
Corporation.
All Rights reserved.
lmutil v11.5.0.0 build 56285 i86_mac10
```

To update FLEXnet in Mac OS X

You should be logged in with the same user ID you used when installing the FLEXnet files, for example, */Users/<userid>/adsknlm*. The logged in user ID should be in the *sudoers* list to execute some of the following commands.

1. Back up your license files.
2. Stop the Autodesk Network License Manager service by entering the following in Terminal:

   ```
   sudo ./lmutil lmdown -q -force
   ```

3. Note the location where the Network License Manager is installed and then uninstall the Network License Manager by entering the standard Mac OS X commands, for example, *rm*.
4. Install the Network License Manager. Copy the new version of the FLEXnet network license manager files (lmgrd, adskflex, and lmutil) to the location recommended when you configured your license server, for example, */Users/<user id>/adsknlm*.

5 Start the Autodesk Network License Manager service by entering the following string in Terminal.

NOTE In the string, replace *acad.lic* and *debug.log* with your license file name and log file name.

```
sudo ./lmgrd -c acad.lic -l debug.log
```

To update FLEXnet in Linux

You should be logged in with the same user ID you used when installing the FLEXnet files, for example, */home/<userid>/adsknlm*. The logged in user ID should be in the *sudoers* list to execute some of the following commands.

1 Back up your license files.

2 Stop the Autodesk Network License Manager service by entering the following in Terminal:

```
./lmutil lmdown -q -force
```

3 Note the location where the Network License Manager is installed and then uninstall the Network License Manager by entering the standard Linux commands, for example, *rm*.

4 Install the Network License Manager. Copy the new version of the FLEXnet network license manager files (lmgrd, adskflex, and lmutil) to the location recommended when you configured your license server, for example, */home/<user id>/adsknlm*.

5 Start the Autodesk Network License Manager service by entering the following string in Terminal.

NOTE In the string, replace *acad.lic* and *debug.log* with your license file name and log file name.

```
./lmgrd -c acad.lic -l debug.log
```

Set Up and Use an Options File

With an options file, you set configuration options that determine how a license server manages licenses. An options file sets parameters that the license file reads and the *lmgrd* program executes.

The options file on each server specifies the license-handling behavior for that server. By managing the contents of the options files, you can specify the

same behavior on all license servers, or implement particular differences among the servers.

NOTE For options file changes to take effect on a license server, you must save the options file, and then reread the license file.

Use the options file to set parameters for the following server-related features:

- Report log file
- License borrowing
- License timeout

You can also set up advanced license parameters, such as reserving a license, restricting license usage, or defining groups of users. To learn more about setting advanced options file parameters, see the FLEXnet documentation. This documentation is installed on the license server, in the Network License Manager directory.

Create an Options File

NOTE For options file changes to take effect on a license server, you must save the options file, and then reread the license file.

To create an options file on a Windows platform

You should be logged in with Administrator permissions when working with the LMTOOLS utility.

1. Open a text editor, enter the parameters you want, and then save the document as a file named *adskflex.opt* to the same location where you saved the license file.

   NOTE Make sure you save the file with the extension *.opt*. The default extension *.txt* is not recognized by the Network License Manager.

2. Click Start ➤ All Programs ➤ Autodesk ➤ Network License Manager ➤ LMTOOLS Utility.
3. In the LMTOOLS utility, on the Start/Stop/Reread tab, click Reread License File.
4. Close LMTOOLS.

To create an options file on a Mac OS X or Linux platform

1. Open a text editor, enter the parameters you want, and then save the document as a file named *adskflex.opt* to the same location where you saved the license file.

   NOTE Make sure you save the file with the extension *.opt*. The default extension *.txt* is not recognized by the Network License Manager.

2. launch a Terminal window, navigate to the Autodesk Network License Manager folder, and enter the following string:

   ```
   ./lmutil lmreread -c @hostname-all
   ```

3. Close the Terminal window.

Create a Report Log

In the options file, you can create a report log file, which is a compressed, encrypted file that provides usage reports on license activity.

Windows Procedure

To create a report log

1. In a text editor, open the options file, *adskflex.opt*.
2. In the options file, enter the following syntax on its own line (REPORTLOG must be uppercase):

   REPORTLOG [+]report_log_path

   For example, the syntax REPORTLOG +"c:\My Documents\report.rl" means that a report log named *report.rl* is located in the folder *c:\My Documents*.

   NOTE Path names that contain spaces must be enclosed in quotation marks.

   In the REPORTLOG syntax, "[+]" means that entries to the log file you create are appended rather than replaced each time the Network License Manager is restarted. It is recommended that you use this option to retain a history of log entries.

Mac OS X or Linux Procedure

To create a report log

1. In a text editor, open the options file, *adskflex.opt*.
2. In the options file, enter the following syntax on its own line (REPORTLOG must be uppercase):

   REPORTLOG [+]report_log_path

   For example, the syntax REPORTLOG +"/Users/<user id>/NLM/report.rl" means that a report log named *report.rl* is located in the folder */Users/<user id>/NLM*.

   NOTE Path names that contain spaces must be enclosed in quotation marks.

   In the REPORTLOG syntax, "[+]" means that entries to the log file you create are appended rather than replaced each time the Network License Manager is restarted. It is recommended that you use this option to retain a history of log entries.

Configure License Borrowing with the Options File

If your Autodesk product supports the license borrowing feature, you can use the options file to configure license borrowing options. For example, define the maximum number of licenses that can be borrowed from your network at any one time. In addition, define which users can borrow an Autodesk product license. Licenses are assigned to users, not computers.

For more information on license borrowing, see License Borrowing (page 38).

NOTE If your Autodesk product licenses are borrowed from a redundant license server pool, you must restart the license server after you stop the Network License Manager.

At the end of a borrow period, the borrowed license is automatically disabled on the user's computer and becomes available again on the license server. Users can also return a license before a borrow period has ended.

To set license borrowing parameters

1. In the options file, enter the following syntax on its own line (BORROW_LOWWATER must be uppercase):

   BORROW_LOWWATER feature_code n

   In the BORROW syntax, "feature_code" is the name of the product in the license file, and "n" is the minimum number of licenses that must remain on the server. When this number is reached, no more licenses can be borrowed.

   For example, the syntax BORROW_LOWWATER Autodesk_f1 3 means that for the product Autodesk_f1, when only three licenses remain on the license server, no licenses can be borrowed.

2. Enter the following syntax on the next line (MAX_BORROW_HOURS must be uppercase):

   MAX_BORROW_HOURS feature_code n

   In this syntax, "n" is the number of hours that a license can be borrowed.

   For example, the syntax MAX_BORROW_HOURS Autodesk_f1 360 means that for product Autodesk_f1, licenses can be borrowed for 360 hours, or 15 days.

   NOTE Licenses are borrowed in increments of 24 hours only. Any number that is more than a 24-hour increment is not used. For example, the number 365 would be rounded down to 360 hours, or 15 days.

For more information about setting up the license borrowing feature, see the FLEXnet documentation. On a Windows computer, go to this folder: *C:\Program Files\Autodesk Network License Manager*.

NOTE To borrow a license in an Autodesk product, click Help ➤ About ➤ Product Information ➤ Borrow License. Alternatively, enter **borrowlicense** on the product command line. Help for this feature is available in the Borrow a License for *[Product Name]* window and in *C:\Program Files\[Product Name]\Help\adsk_brw.chm*.

Set Up License Timeout

License timeout is set in the options file to determine how long a product session can be idle before the license is reclaimed by the license server. When you set this flag in the options file, a user's license is reclaimed by the license server if the product is idle on a computer for more than the timeout period you define.

IMPORTANT License timeout is not supported by all Autodesk products.

If a user's license is lost because of the idle timeout, the product attempts to claim a new license once the user uses the product again. If no license is available, the user can save work before the product shuts down.

You can use the TIMEOUT parameter to set individual license timeouts for each Autodesk product on your computer, or use the TIMEOUTALL parameter to set one license timeout for all Autodesk products on your computer.

To set license timeout parameters

- For individual Autodesk products: In the options file, enter the following syntax on its own line (TIMEOUT must be uppercase):

  TIMEOUT feature_code n

  In the TIMEOUT syntax, "feature_code" is the name of the product (referred to in the `INCREMENT` line in the license file), and "n" is the number of seconds before an inactive license is reclaimed by the license server.

  For example, the syntax `TIMEOUT Autodesk_f1 7200` means that for the product Autodesk_f1, the license timeout period is 7200 seconds, or two hours.

- For all Autodesk products: In the options file, enter the following syntax on its own line (TIMEOUTALL must be uppercase):

  TIMEOUTALL n

  In the TIMEOUTALL syntax, "n" is the number of seconds before an inactive license is reclaimed by the license server.

  For example, the syntax `TIMEOUTALL 7200` means that for all Autodesk products, the license timeout period is 7200 seconds, or two hours.

For more information about using the license timeout feature, see the FLEXnet documentation. On a Windows server, it is located in *C:\Program Files\Autodesk Network License Manager* folder. On a Mac OS X or Linux server, the documentation is installed in the Network License Manager directory.

Frequently Asked Questions about Network Licensing

This section outlines some common questions and their solutions with regards to software licenses and licensing your product(s). For additional advice and

assistance, go to *Autodesk Support*, click your product name, and search in the Knowledgebase for your product.

What is the difference between a stand-alone license and a network license?

A stand-alone license supports one or more Autodesk products for an individual user. Similarly, a multi-seat stand-alone license supports a specific number of users. While the software can be installed on additional computers in your facility, the licensed number of users cannot be exceeded.

A network license supports a specific maximum number of users who are connected to a network. A software utility known as the Network License Manager (NLM) issues licenses to users, up to the number of licenses purchased. At this point, no more computers can run the Autodesk product until a license is returned to the NLM.

What is the benefit of using a network licensed version of the software?

Network licensing provides ease of license management for large drafting/design facilities, classrooms, and other environments that need to support many users. The Network License Manager provides centralized control of licenses, including their registration, activation, and distribution to users. One main advantage of a network license is that you can install products on more computers than the number of licenses you have purchased. For example, you can purchase 25 licenses but install them on 40 computers for ease of access. At any one time, products can run on the maximum number of computers for which you have licenses. This means you get a true floating license. A network licensing system can also be configured to allow users to borrow a license for a limited time to use on a computer disconnected from the network.

How does the licensing process use the Internet?

An Internet browser is used to facilitate license activation. After installing your product, you can operate in trial mode for a specified period, typically 30 days. When you choose to activate the software and enter your registration data,

your computer communicates with Autodesk over the Internet. An activation code is returned and you are not prompted again during startup. The Internet is also used to communicate with Autodesk for other purposes such as authorizing access to the Subscription Center, downloading service packs, and sending product support messages.

Appendix: Autodesk 3ds Max Licensing

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Autodesk 3ds Max uses the same licensing and activation procedures as other Autodesk products. No additional licensing information is required.

For all information on licensing, refer to the main Stand-Alone Licensing (page 5) and Network Licensing (page 13) chapters in this guide.

Appendix: Autodesk Maya Licensing

5

Certain items are unique to the Autodesk Maya licensing process (in contrast with other Autodesk products). In this chapter, learn how to start the License Transfer Utility to import or export your stand-alone license on Mac OS X and Linux platforms, as well as how to borrow Maya licenses with sub-features.

This chapter also includes information on installing the Network License Manager for Mac OS X and Linux.

Maya Stand-Alone Licensing

Transfer your stand-alone license (Mac OS X or Linux)

NOTE For Windows, the license transfer process is described in the main part of this licensing guide. Use the following instructions if you are importing and exporting your stand-alone license using the License Transfer Utility on Mac OS X or Linux.

To open the License Transfer Utility and import or export your stand-alone license

1. Do either of the following, depending on your platform:
   - **(Mac OS X)** Navigate to /Applications/Autodesk/<*productName*>2012/Licensing/ and double-click the License Transfer Utility application.
   - **(Linux)** Open a shell and run the following command, where <*productKey*> is your product key:

```
/opt/Autodesk/Adlm/R4/bin/LTU <productKey> 2012.0.0.F
 -d "SA"
```

Maya Network Licensing

Install the IPv4 or IPv6 versions of Network License Manager

For Windows, you can install the IPv4 version of the Network License Manager from the Tools and Utilities tab in your Autodesk product installer. For Mac OS X or Linux, you can find the Autodesk licensing tools on your product DVD, download package, or at *www.autodesk.com/licensetools*.

If you need to install other versions of the Network License Manager, you can do so from Autodesk.com at the following locations:

- *www.autodesk.com/nlm-ipv4-windows* (Same version as in Tools and Utilities tab.)
- *www.autodesk.com/nlm-ipv4-mac*
- *www.autodesk.com/nlm-ipv4-linux*
- *www.autodesk.com/nlm-ipv6-windows*
- *www.autodesk.com/nlm-ipv6-mac*
- *www.autodesk.com/nlm-ipv6-linux*

Install the Network License Manager (Mac OS X)

To install the Network License Manager

1. Navigate to the NetworkLicenseManager folder on your product DVD, or in the package you downloaded.
2. Do one of the following:
   - (DVD) Double-click the Network License Manager package icon.
   - (Download) Double-click the Network License Manager .dmg, then double-click the Network License Manager package icon.

The Install Autodesk NLM wizard appears.

3 Click **Continue** to begin the installation, then follow the instructions in the installer to install the Network License Manager tools.

4 Click Close when you see the Install Succeeded message.

By default, the Network License Manager tools are installed in the following directory: `/usr/local/flexnetserver`. In addition, scripts to help set up your license server are installed in the following directory: `/Library/StartUpItems/adsknlm`.

Configure a Mac OS X License Server for Maya or Mudbox

When you install the Network License Manager for Maya or Mudbox, the installation includes scripts that automate some of the configuration process.

To configure automatic start-up of your license server

1 Locate your network license file and rename it `adsk_server.lic`.

2 Copy `adsk_server.lic` to the following directory: `/var/flexlm/`

NOTE Create this directory if it does not already exist.

3 Reboot your computer.

4 Use the Console to verify that lmgrd and adskflex start up successfully.

Install the Network License Manager (Linux)

To install the Network License Manager

1 Open a shell as a super user (using `su -`).

2 Navigate to the NetworkLicenseManager directory on your product DVD, or extract the Network License Manager package from the compressed file that you downloaded.

3 To install the Network License Manager, enter the following command:

```
rpm -ivh adlmflexnetserver-#.rpm
```

where # is the package number.

Uninstall the Network License Manager (Mac OS X)

To uninstall the Network License Manager

1. Delete the following directories:
   - /usr/local/flexnetserver/
   - /Library/StartUpItems/adsknlm

   This removes the main license server tools as well as the configuration scripts that help you set up your license server.
2. Reboot your machine.

Uninstall the Network License Manager (Linux)

To uninstall the Network License Manager

1. Open a shell as a super user.
2. Execute the following command to verify the package number of the Network License Manager that you installed:

   ```
   rpm -qa |grep adlm
   ```

3. Execute the following command to uninstall the Network License Manager package:

   ```
   rpm -e adlmflexnetserver-#.rpm
   ```

   where # is the package number.
4. If you edited your rc.local file to configure your license server (for example to start lmgrd), remove those commands from the rc.local file.

License Operation and Availability

You can run only one Autodesk vendor daemon (adskflex.exe) on your license server. This means that if you plan to serve licenses for multiple Autodesk products that were purchased individually (not as part of a suite or bundle)

you must combine the license file contents for the products into one license file.

For example, if you plan to serve Maya licenses from a machine that is already serving 3ds max licenses, you must append the contents of your Maya license file to the 3ds max license file. See Example of a License File for Combined Autodesk Product Versions (page 24) for more information.

TIP You can use the following commands to query the status of your license server and determine how many licenses you have in total, how many are in use, and to verify that your license server is up and running:

- (Windows) `lmutil lmstat -a -c` *<license file>* (where *<license file>* is your license file name)
- (Mac OS X)

```
/usr/local/flexnetserver/lmutil
lmstat -a -c /var/flexlm/maya.lic
```

- (Linux)

```
/opt/flexnetserver/lmutil
lmstat -a -c /var/flexlm/maya.lic
```

Borrow a Maya license with sub-features

NOTE Borrowing a Maya license using the general Autodesk license borrowing procedure does not borrow licenses for specialized nodes such as the Maya batch render node. If you are borrowing a Maya license and plan to use the Maya batch renderer while you have a borrowed license, use the following Maya-specific license borrowing steps.

Borrow a Maya license

To borrow a Maya license (Windows)

NOTE The LMTOOLS utility is packaged with the Network License Manager. If you do not have the LMTOOLS utility installed, you can install it as part of the Network License Manager. See Install the Network License Manager (page 30).

1. Open the LMTOOLS utility by selecting **Start > Programs > Autodesk > Common Utilities > FlexLM License Utilities**.

2 In the LMTOOLS utility, switch to the **Borrowing** tab.

3 In the **Vendor Name** field, enter `adskflex`.

4 Enter the **Return Date** and the **Return Time**, then click **Set Borrow Expiration**.

5 Launch Maya.

This borrows a Maya license from the server.

6 Use any sub-features of Maya (such as the Maya batch renderer) while you are still connected to your license server. This automatically borrows a license for that sub-feature.

After you have used the sub-feature(s) while connected to your license server, you can then use the sub-features later when you are not connected.

To borrow a Maya license (Mac OS X or Linux)

1 Open a shell (Linux) or Terminal (Mac OS X) window.

2 Execute the following command: `lmutil lmborrow adskflex` *enddate* `[` *time* `]`

where *enddate* is the date you will return the license, formatted as follows: *dd-mmm-yyyy* . The *time* argument is optional, but is specified in 24-hour format (*hh:mm*).

For example: `lmutil lmborrow adskflex 14-oct-2012 [14:00]` borrows a license until October 14, 2012 at 2:00 pm.

3 Launch Maya.

This borrows a Maya license from the server.

4 Use any sub-features of Maya (such as the Maya batch renderer) while you are still connected to your license server. This automatically borrows a license for those sub-features.

After you have used the sub-feature(s) while connected to your license server, you can then use the sub-features later when you are not connected.

Stop borrowing a Maya license

Stopping license borrowing is different from returning a license. You can stop borrowing licenses if you have already checked out all of the licenses you want, but you still plan to use sub-features while you are connected to the network server and do not want to borrow those licenses.

For example, you can borrow a Maya license and a Maya batch renderer license, then stop borrowing so that when you use the batch renderer (and automatically use a subfeature license for the Maya batch renderer), you do not borrow the batch renderer license from the server. In this situation, after you stop borrowing, your Maya and batch render licenses are still borrowed until the return date that you set, but the batch render license you used stays on the server.

To stop borrowing a Maya license (Windows)

1. Open the LMTOOLS utility by selecting **Start > Programs > Autodesk > Common Utilities > FlexLM License Utilities**.
2. In the LMTOOLS utility, switch to the **Borrowing** tab.
3. Click **Don't Borrow Anymore Today**.

To stop borrowing a Maya license (Mac OS X or Linux)

1. Open a shell (Linux) or Terminal (Mac OS X) window.
2. Execute the following command: `lmutil lmborrow -clear`

Return a Maya license and sub-feature licenses

Your network license is automatically returned to the network license server at the end of the return date you set when you borrowed the license. You can also return a license earlier than the date you originally selected, as long as your computer is connected to the network license server when you attempt to return the borrowed license.

Returning a license means that you are returning a license to the network server so that someone else can use or borrow it. Once a borrowed license is returned, you can borrow a license again as long as your computer is connected to the network license server and a license is available on the server.

If you use the Maya batch render feature while you have a Maya license borrowed from your license server, you have automatically borrowed a sub-feature license. The following steps include information on properly returning the licenses for those sub-features. The following table lists the feature codes that you will need if you use these sub-features.

Feature or Sub-feature	Feature license code
Maya	85694MAYA_2012_0F

Feature or Sub-feature	Feature license code
Maya batch render	85694MAYAMMR1_2012_0F

To return a license early (Windows)

1. Open the LMTOOLS utility by selecting **Start > Programs > Autodesk > Common Utilities > FlexLM License Utilities**.
2. In the LMTOOLS utility, switch to the **Borrowing** tab.
3. Click **List Currently Borrowed Features**, and note any sub-features that are listed in the bottom pane of the **Borrowing** tab.

   For example, if you have used the Maya batch renderer, the sub-feature code `85694MAYAMMR1_2012_0F` displays.
4. (Optional) If you are returning sub-feature licenses, copy the sub-feature code and paste it into the **Feature Name** field.
5. Click **Return Borrowed Licenses Early**.
6. Repeat steps 4 and 5 for all sub-features you have borrowed.

To return a license early (Mac OS X or Linux)

On the same computer where you borrowed the license, do the following:

1. Open a shell (Linux) or Terminal (Mac OS X) window.
2. Execute the following command to determine if you have borrowed any sub-feature licenses: `lmutil lmborrow -status`

   The command returns the feature codes for any sub-feature licenses you have checked out. For example, if you have used the Maya batch renderer, the feature code `85694MAYAMMR1_2012_0F` displays.
3. Execute the following command: `lmutil lmborrow -return` *<feature>*

   where *<feature>* specifies the code of the feature or sub-feature for which you are returning a license.

Return a license

To return a borrowed license early

1. Select **Help > About Maya**, then click **Product License Information**.

2 In the **Product License Information** window, click **Return License**, then click **Yes**.

To check the license return date

1 Select **Help > About Maya**, then click **Product License Information**.

2 In the **Product License Information** window, under **License Expiration Date**, view the license return date.

Example options file for Maya

The procedure for creating an options file is described in the main part of this guide: see Create an Options File (page 49).

The following is an example options file for Maya, set to borrow licenses for 2 days.

```
  #Component
MAX_BORROW_HOURS 8xxxxMAYA_2012_0F 72
MAX_BORROW_HOURS 8xxxxMAYA_2011_0F 72
MAX_BORROW_HOURS 8xxxxMAYA_2010_0F 72
```

FLEXnet Configuration Tools

For specific information about using FLEXnet configuration tools, you can find the LicenseAdministration.pdf document in the following directory:

- (Windows) `C:\Program Files\Autodesk Network License Manager\Docs\FlexUser\LicenseAdministration.pdf`
- (Mac OS X) `/usr/local/flexnetserver/LicenseAdministration.pdf`
- (Linux) `/opt/flexnetserver/LicenseAdministration.pdf`

How do I switch my license from stand-alone to network or network to stand-alone?

If you have purchased stand-alone and network licenses and you want to switch which license Maya is using, there are two main methods to change the license type.

- Uninstall and re-install Maya, changing the type of license you specify during the install.
- Edit the MAYA_LICENSE_METHOD environment variable in your `license.env` file.

  If you have added the MAYA_LICENSE_METHOD variable to your system environment variables or to a Maya.env file, you must also update the license type in those locations.

To edit the MAYA_LICENSE_METHOD environment variable

1. Locate the `license.env` file in the following location:
   - (Windows) `C:\Program Files\Autodesk\Maya2012\bin`
   - (Linux) `/usr/autodesk/maya2012-x64/bin`
   - (Mac OS X) In the Maya installation directory (by default `/Applications/Autodesk/maya2012/`), right-click the Maya application and select **Show Package Contents**. Locate the `license.env` file in the **Contents** directory.
2. Edit the MAYA_LICENSE_METHOD variable to indicate the type of license you want, for example:

   `MAYA_LICENSE_METHOD=standalone`

   to set Maya to use a stand-alone license, or

   `MAYA_LICENSE_METHOD=network`

   to set Maya to use a network license.

   If you are switching from a stand-alone to a network license, continue with the following steps to set your license server name.
3. Navigate to the following directory to locate and open the `LICPATH.LIC` file.
   - (Windows) `C:\Program Files\Autodesk\Maya2012`
   - (Mac OS X and Linux) `/var/flexlm/`

4 Edit the line `SERVER <servername>` where *<servername>* is your license server name.

If you do not find the `LICPATH.LIC` file in this location, you can create a license file by saving a text file with the extension .lic, and including the following lines:

```
SERVER <servername> 0
USE_SERVER
```

IMPORTANT If you have added the MAYA_LICENSE_METHOD variable to your system environment variables or to a `Maya.env` file, you must also update the license type in those locations.

To locate the Maya.env file

- (Windows) `C:\Documents and Settings\user\My Documents\maya`
- (Mac OS X) `/Users/username/Library/Preferences/Autodesk/maya/version`
- (Linux) `/home/<user>/maya`

How do I change the license server information I entered during the installation?

To change the license server information you entered

1 Navigate to the following directory to locate and open the `LICPATH.LIC` file.
   - (Windows) `C:\Program Files\Autodesk\Maya2012`
   - (Mac OS X and Linux) `/var/flexlm/`

2 Edit the line `SERVER <servername>` where *<servername>* is your license server name.

   If you do not find the `LICPATH.LIC` file in this location, you can create a license file by saving a text file with the extension .lic, and including the following lines:

   ```
   SERVER <servername> 0USE_SERVER
   ```

Appendix: Autodesk MotionBuilder Licensing

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Autodesk MotionBuilder uses the same licensing and activation procedures as other Autodesk products. No additional licensing information is required.

For all information on licensing, refer to the main Stand-Alone Licensing (page 5) and Network Licensing (page 13) chapters in this guide.

Appendix: Autodesk Mudbox Licensing

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For Mudbox on Windows, all licensing procedures are described in the main Stand-Alone Licensing (page 5) and Network Licensing (page 13) chapters in this guide. For Mudbox on Mac OS X or Linux, use the following sections for information on using the Transfer License Utility and the Network License Manager.

Mudbox Stand-Alone Licensing

Transfer your stand-alone license (Mac OS X or Linux)

NOTE For Windows, the license transfer process is described in the main part of this licensing guide. Use the following instructions if you are importing and exporting your stand-alone license using the License Transfer Utility on Mac OS X or Linux.

To open the License Transfer Utility and import or export your stand-alone license

1. Do either of the following, depending on your platform:
   - **(Mac OS X)** Navigate to /Applications/Autodesk/<*productName*>2012/Licensing/ and double-click the License Transfer Utility application.
   - **(Linux)** Open a shell and run the following command, where <*productKey*> is your product key:

     ```
     /opt/Autodesk/Adlm/R4/bin/LTU <productKey> 2012.0.0.F
      -d "SA"
     ```

Mudbox Network Licensing

Install the IPv4 or IPv6 versions of Network License Manager

For Windows, you can install the IPv4 version of the Network License Manager from the Tools and Utilities tab in your Autodesk product installer. For Mac OS X or Linux, you can find the Autodesk licensing tools on your product DVD, download package, or at *www.autodesk.com/licensetools*.

If you need to install other versions of the Network License Manager, you can do so from Autodesk.com at the following locations:

- *www.autodesk.com/nlm-ipv4-windows* (Same version as in Tools and Utilities tab.)
- *www.autodesk.com/nlm-ipv4-mac*
- *www.autodesk.com/nlm-ipv4-linux*
- *www.autodesk.com/nlm-ipv6-windows*
- *www.autodesk.com/nlm-ipv6-mac*
- *www.autodesk.com/nlm-ipv6-linux*

Install the Network License Manager (Mac OS X)

To install the Network License Manager

1. Navigate to the NetworkLicenseManager folder on your product DVD, or in the package you downloaded.
2. Do one of the following:
   - (DVD) Double-click the Network License Manager package icon.
   - (Download) Double-click the Network License Manager .dmg, then double-click the Network License Manager package icon.

   The Install Autodesk NLM wizard appears.
3. Click **Continue** to begin the installation, then follow the instructions in the installer to install the Network License Manager tools.
4. Click Close when you see the Install Succeeded message.

By default, the Network License Manager tools are installed in the following directory: `/usr/local/flexnetserver`. In addition, scripts to help set up your license server are installed in the following directory: `/Library/StartUpItems/adsknlm`.

Install the Network License Manager (Linux)

To install the Network License Manager

1. Open a shell as a super user (using `su -`).
2. Navigate to the NetworkLicenseManager directory on your product DVD, or extract the Network License Manager package from the compressed file that you downloaded.
3. To install the Network License Manager, enter the following command:

   ```
   rpm -ivh adlmflexnetserver-#.rpm
   ```

   where # is the package number.

Configure a Mac OS X License Server for Maya or Mudbox

When you install the Network License Manager for Maya or Mudbox, the installation includes scripts that automate some of the configuration process.

To configure automatic start-up of your license server

1. Locate your network license file and rename it `adsk_server.lic`.
2. Copy `adsk_server.lic` to the following directory: `/var/flexlm/`

   NOTE Create this directory if it does not already exist.

3. Reboot your computer.
4. Use the Console to verify that lmgrd and adskflex start up successfully.

Uninstall the Network License Manager (Mac OS X)

To uninstall the Network License Manager

1. Delete the following directories:
   - /usr/local/flexnetserver/
   - /Library/StartUpItems/adsknlm

   This removes the main license server tools as well as the configuration scripts that help you set up your license server.
2. Reboot your machine.

Uninstall the Network License Manager (Linux)

To uninstall the Network License Manager

1. Open a shell as a super user.
2. Execute the following command to verify the package number of the Network License Manager that you installed:

   ```
   rpm -qa |grep adlm
   ```

3. Execute the following command to uninstall the Network License Manager package:

   ```
   rpm -e adlmflexnetserver-#.rpm
   ```

   where # is the package number.
4. If you edited your rc.local file to configure your license server (for example to start lmgrd), remove those commands from the rc.local file.

FLEXnet Configuration Tools

For specific information about using FLEXnet configuration tools, you can find the LicenseAdministration.pdf document in the following directory:

- (Windows) `C:\Program Files\Autodesk Network License Manager\Docs\FlexUser\LicenseAdministration.pdf`

- (Mac OS X) `/usr/local/flexnetserver/LicenseAdministration.pdf`
- (Linux) `/opt/flexnetserver/LicenseAdministration.pdf`

Appendix: Autodesk Showcase Licensing

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Autodesk Showcase uses the same licensing and activation procedures as other Autodesk products. No additional licensing information is required.

For all information on licensing, refer to the main Stand-Alone Licensing (page 5) and Network Licensing (page 13) chapters in this guide.

Appendix: Autodesk Softimage Licensing

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Autodesk Softimage uses the same licensing and activation procedures as other Autodesk products. No additional licensing information is required.

For all information on licensing, refer to the main Stand-Alone Licensing (page 5) and Network Licensing (page 13) chapters in this guide.

Glossary

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ADSKFLEX_LICENSE_FILE In a distributed license server configuration, the environment variable used to point a computer to the distributed license servers.

adskflex or adskflex.exe The Autodesk vendor daemon used with the FLEXnet license technology. This daemon keeps track of the Autodesk licenses that are checked out and the computers that are using the licenses.

borrowed license A type of network license that allows you to use an Autodesk product for a limited period of time disconnected from the network, without having to buy a separate license.

daemon A program that runs continuously in the background of a computer. The daemon handles requests from the computer and then forwards the requests to other programs or processes. The Network License Manager uses two daemons: the vendor daemon (*adskflex or adskflex.exe*) and the license manager daemon (*lmgrd or lmgrd.exe*).

debug log file A file used with FLEXnet to log connection events between the Network License Manager and the user's computer.

deployment A set of files and folders created on a server and used by computers to install Autodesk programs with a consistent configuration.

distributed server A license server configuration option in which several servers are used to manage license distribution. Each distributed license server has a unique license file and a fixed number of licenses. If one distributed license server fails, the other servers are still able to distribute their licenses.

Ethernet address See *host ID*.

feature code A license file parameter that represents the product that is supported by that license file.

FLEXnet The Flexera Software license management technology implemented in the Autodesk family of products.

heartbeat signal The communication signal between the Network License Manager and the computer to verify that the computer is accessible and has an active Autodesk product session running.

host ID The unique hardware address of a network adapter. Also known as *Ethernet address* or *physical address*.

host name The TCP/IP name associated with a computer. FLEXnet technology uses the host name as a parameter; the host name must be distinguished from the NetBIOS (server) name.

idle A state of inactivity in your product that prompts a network license server to reclaim a license. Inactivity is due to no mouse or keyboard activity and no commands, LISP expressions, menu macros, or scripts in progress for the period of time that is defined in the options file. See also *license timeout.*

JRE (Java Runtime Environment) A program that is required to run Java programs.

license file A file used with FLEXnet that controls the number of available seats. This file must be in ASCII plain text format.

license server A server that contains the Network License Manager and manages the distribution of licenses to users.

license timeout For network licenses, this is a time period that starts counting when a computer that is using a license is idle. If the timeout period elapses and the computer remains idle, the license is returned to the license server and is available for use again.

licpath.lic In both single and redundant server configurations, the file used to point the computer to the FLEXnet license server. *Licpath.lic* is located in the root installation folder.

lmgrd or lmgrd.exe The license manager daemon. This daemon handles the original contact with the program, and then passes the connection to the vendor daemon, *adskflex or adskflex.exe*.

lmtools or lmtools.exe A graphical user interface utility for administering the FLEXnet license technology. *See also lmutil or lmutil.exe*.

lmutil or lmutil.exe A command-line utility used to administer the FLEXnet license technology. *See also lmtools or lmtools.exe*

master daemon See*lmgrd or lmgrd.exe*.

network license installation A type of Autodesk product installation that requires the Network License Manager installed on one or more network servers to manage the distribution of product licenses to users.

Network License Manager The technology used by Autodesk for network license management.

options file The file used by FLEXnet to set network license management parameters, such as the location of report logs and the time period for license borrowing.

physical address See *host ID*.

redundant server A license server configuration option in which three servers are used to administer licenses. The redundant servers share a license file and a pool of licenses. The redundant server pool remains functional as long as two of the three servers are running and communicating with each other.

report log file A file used with FLEXnet to provide information about network license usage. The options file sets parameters for the report log.

vendor daemon See *adskflex or adskflex.exe*.

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